

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Donald A. Pile et al.)	Confirmation No.: 8048
)	
Application No: 10/764,246)	Group Art Unit: 1755
)	
Filed: January 23, 2004)	Examiner: Felton, Aileen Baker
)	
For: PRIMING MIXTURES)	Docket No.: R087 1273.1
FOR SMALL ARMS)	(27584.0294.3)

REPLY BRIEF

VIA EFS

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 41.41, Appellants submit this Reply Brief in response to the Examiner's Answer mailed August 21, 2008.

1. Rejection of Claims 1, 3-16, 18-22, 32-38, 40, 41, 44 and 45 based upon the Attempted Combination *John Jr.* in either *Boberg* or *Calsson* under 35 U.S.C. § 103(a)

As previously discussed in Appellants' Appeal Brief, the Supreme Court's decision in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. at _____ 82 U.S.P.Q.2nd 1385 (2007), while it clarified the law relating to "obviousness" under § 103, still did not go so far as to allow the simple picking and choosing bits and pieces of teachings from references, or otherwise trying to combine only selected teachings of references to support a rejection under 35 U.S.C. § 103(a). Instead, the court in *KSR* made it clear that any rejection based upon 35 U.S.C. § 103(a) must rest upon a factual basis, which facts must be interpreted without hindsight reconstruction of the invention from the prior art or "viewed after the event." See MPEP §§ 2141-2142; *KSR*, 550 U.S. at _____, 82 U.S.P.Q.2nd at 1398. As the court also noted in *KSR*, the key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious," and therefore the analysis supporting a rejection under "35

U.S.C. § 103 should be made explicit.” See *KSR*, 550 U.S. at ____, 82 U.S.P.Q.2nd at 1396-1398.

Accordingly, it is the burden of the Examiner to initially present a *prima facie* case of unpatentability. An applicant’s rebuttal in response the Examiner’s initial showing further “must not be evaluated only for its ability to knock down the *prima facie* case of obviousness; it also must be evaluated together with the facts on which that case was based. In short, the Examiner must consider all the evidence anew, and an earlier conclusion of unpatentability should not be regarded as set in concrete.” *In re Sullivan*, 498 F.3d 1345, 84 U.S.P.Q.2nd 1034, 1038 (Fed. Cir. 2007); *In re Piasecki*, 745 F.2d 1468, 223 U.S.P.Q. 785 (Fed. Cir. 1984). [See also *In re Glaug*, 283 F.3d 1335, 62 U.S.P.Q.2nd 1151 (Fed. Cir. 2002)]. [“The *prima facie* case is not a stonewall against which rebuttal evidence is tested; patentability is determined by a preponderance of all of the evidence.”] In the present case, it is respectfully submitted that the Examiner has failed to give due consideration to Appellants’ arguments and evidence rebutting the attempted combination of references cited by the Examiner and that, when the references are considered in their entirety, it can be seen that the attempted combination of the teachings of *John, Jr.* with either *Boberg* or *Calsson* is not proper and thus the rejection of the present claim should be overturned.

The Examiner’s Answer, rather than providing a clear articulation of support from the rejection in view of Appellants’ Appeal Brief rebutting the rejection and giving consideration to the entirety of the cited references, including consideration of how they teach away from the claimed invention, simply takes the position that “since all three patents relate to primers, it would be obvious to use the bismuth trioxide as taught by *Boberg* or *Calsson* with the primer of *John, Jr.* since both *Boberg* and *Calsson* teach that it is known to use Bismuth Trioxide as an oxidizer in a priming composition.” (Examiner’s Answer, p. 4, part (10)). The Answer further tries to attack Appellants’ showing regarding the differences between *Calsson* to the delay or ignition charges of *Boberg* and the small arms primer of *John, Jr.*, and which teach significantly slower burn rates as desired, given their specific uses directed to the field of pyrotechnics rather than small arms ammunition, by arguing that burn rates “are not claimed,” and at the same time, arguing that “the burn rate would be an inherent property of the composition as disclosed and taught.”

The Answer, however, fails to directly address the express statements made in both *Boberg* and *Calsson* that the inventions disclosed therein both relate “to a pyrotechnic delay charge” and/or a method of producing a pyrotechnical charge for ignition and delay purposes. (See *Calsson*, Col. 1, ll. 6-20 expressly disclosing that “the pyrotechnic charge [of *Calsson*] may be given an optional rate of burning of between 3 and 150 mm/sec.”; See also *Boberg*, Col. 1, ll. 9-21 expressly noting that “pyrotechnic delay charges”, such as disclosed therein, are used “to provide a time delay between an initiating signal, for instance from an electrically activated fuse head or from a fuse, and triggering of a main reaction, such as ignition of a propulsive charge or triggering of a blasting charge.” In fact, it is submitted that the pyrotechnic charges of *Boberg* and *Calsson* in actuality are not “small arms primers” but rather are directed to pyrotechnical charges that are wholly different in use and operation from a small arms primer as is taught by the claimed invention. For example, as opposed to the small arms primers of the claimed invention and that of *John, Jr.*, the pyrotechnic charges of *Boberg* and *Calsson* further require an outside source of heat such as a spark or flame to cause their ignition, rather than being percussion activated as with the primer mix of the claimed invention. Accordingly, the Examiner’s continued attempts to use these references to combine a single element therefrom with the primer mix of *John, Jr.*, to try to form the claimed invention is improper.

While asserting that the burn rates are inherent properties of the charges taught by *Boberg* and *Calsson*, the Examiner’s Answer still fails to understand how such significant differences in the burn rates taught by these references teach away from the claimed invention, and further from the combination of such references, when considered in their entireties, with the primer composition of *John, Jr.* For example, *Boberg* expressly discloses the use of its charge as a time delay charge while *Calsson* discloses the use of its charge as a delay or a cascading ignition charge, thus requiring the slower burn rates disclosed. As previously noted, these ignition or burn rates disclosed in both *Boberg* and *Calsson* are a significant order of magnitude too slow for use in a small arms primer mix as disclosed in *John, Jr.* or for use in the claimed invention. (See paragraph 19 of the Declaration of Donald Pile as submitted with Appellants’ Appeal Brief and incorporated herein in its entirety.) As further stated in the Pile Declaration, small arms primers are expressly designed to “detonate” at high velocities, generally on their order of at least 4,500 meters per second. (See paragraph 9 of the Pile Declaration. (emphasis added.)

It also should be noted that Appellants are not attempting to now claim a specific burn rate, but rather are pointing out how the different burn rates, which the Examiner claims are an

inherent property of the charges of both the cited references, exhibit clearly significant differences to the composition and function of the claimed invention versus the proposed combination, and further evidence the teaching away from their proposed combination of the small arms primer of *John, Jr.* For example, *Calsson*, at best, teaches an optimal rate of burning of between 3 and 150 millimeters per second, which is to be expected from a delay or ignition charge in which there is a time lag between the initiating charge and the detonation of the primary charge, such as for fireworks displays and/or blasting at construction sites. *Boberg* similarly teaches a much slower burn rate of the delay charge of its invention of, being in the range of:

“10 to 200 millimeters/second, preferably between 15 and 150 millimeters/second, and especially between 20 and 120 millimeters/second. For civil detonator applications, the charge is convenient for providing delays of the order of 10 to 3,000 ms and especially between 20 and 2,000 ms.” (See *Boberg*, Col. 2, ll. 30-38.)

Both of these references thus clearly teach explosive formulations that compositionally and functionally teach away from their use in small arms ammunition.

Appellants further continue to take issue with Examiner's citation of various examples cited in *Boberg* as teaching much faster ignition or burn rates and respectfully submits that the recitation of “100 m/sec.” or “20 m/sec.” or “11 m/sec,” as well as with the statement in the Examiner's Answer that “Appellant's argument that the burn rates disclosed by *Boberg* are written incorrectly is unpersuasive. There is a presumption of validity of an issued patent and there has been no evidence provided to show that it is wrong.” (Examiner's Answer, p. 4, part (10)). Appellants' claims are not simply based on argument or opinion. The Examiner instead has failed to acknowledge or recognize Appellants' submission of documentary evidence showing that the examples 2, 4 and 5 of *Boberg*, which list burn rates in meters per second, are in direct conflict with the same examples 2, 4 and 5 recited in EP Publication No. 0 599 792B1, which is the European Publication Application based upon the same original Swedish Priority Document as the currently cited U.S. *Boberg* reference. This EP 0 599 792B1 publication previously was submitted to the Examiner during prosecution, and further was submitted with Appellants' Appeal Brief, and includes a listing of the same examples 1-8 as listed in the corresponding U.S. reference to *Boberg*. Instead of listing the burn rates for such examples in “meters per second,” however, this EPO application version of *Boberg* correctly states these burn rates to be in “mm/sec,” which is consistent with the rest of the language of the patent disclosing

preferable burn rates of 10 to 200 millimeters per second, and preferably between 15 and 150 millimeters per second and especially between 20 and 120 millimeters per second. (*See Boberg*, Col. 2, ll. 30-38). Consequently, Appellants submit that they have presented more than sufficient documentary evidence to show that references to burn rates in units of “m/s” in examples 2, 4 and 5 of *Boberg* are incorrect and simply typographical mistakes or errors that are in conflict with not only the disclosure set forth in *Boberg* itself, but also with respect to the disclosures made in the corresponding European Application of *Boberg* for the same invention.

When the cited references are properly considered in their entirety, it can be seen that their disclosures teach away from the proposed limited combination of *John, Jr.* of just the Bismuth Trioxide element of *Boberg* or *Calsson*. As further disclosed in the Declaration of Donald Pile, attached with Appellants’ Appeal Brief, persons of skill in the art would not find it obvious to try to modify the non-toxic small arms primer mix of *John, Jr.* (developed as a substitute for lead-styphnate based small arms primers) with the pyrotechnic delay charge taught by *Boberg*, or alternatively with the pyrotechnic delay or ignition charge taught by *Calsson* given the significant differences in the properties and operations/functions of these inventions, including, quite significantly, the requirement of a spark or other heat source for ignition, as opposed to kinetic energy such as impact of a firing pin initiating firing of the claimed primer mix.

As previously discussed, in small arms primer mixes, as opposed to ignition or delay charges for setting off larger explosions, it is absolutely critical that the small arms round fire is near to simultaneously as possible with the pulling of the trigger. (See paragraph 9 of the Pile Declaration.) If near simultaneous firing does not occur, any movement or reorientation of the firearm during that delay period between the trigger pull and the firing or discharge of the round not only can cause the shooter to miss the intended target, but also can cause the round to fire in an unintended direction or location. This “lock time,” which is defined as the time between the trigger pull and the actual firing of the round in a small arms applications, thus needs to be as minimal as possible in order to ensure accuracy and consistency of the firearm, especially in applications where an inaccurate shot can mean the difference between life and death. A person of ordinary skill in the art consequently would not look to a delay or ignition charge for blasting or other, similar applications, as taught by *Boberg* and/or *Calsson* and in which a delay necessarily is provided/desired between the firing of the initial charge and the ignition of the primary charge, i.e., by creation of a cascading effect, in order to create a small arms primer,

which, by contrast, necessarily must ignite its propellant charge as near to simultaneously with its own ignition as possible.

Accordingly, Appellants respectfully submit that, when considering the cited references in their entireties, proposed combination offered by the Examiner is incorrect, and in fact the cited references appear to teach away from their combination, such that such a combination fails to support a *prima facie* case of obviousness of the claimed invention. Consequently, it is respectfully submitted that the rejection of Claims 1, 3-16, 18-22, 32-38, 40, 41, 44 and 45 based upon the attempted combination of *John, Jr.* and either *Boberg* or *Calsson* is improper and should be overturned.

2. Conclusion

For at least the reasons articulated in the previously filed Appeal Brief and this Reply Brief, Appellants respectfully submit that the recited combination of references when properly considered in their entireties, teach away from their combination and fail to teach or render obvious the claimed invention. Accordingly, Claims 1, 3-16, 18-22, 32-38, 40, 41, 44 and 45 are believed to be patentable under 35 U.S.C. § 103(a) of the proposed combination of *John, Jr.* in view of *Boberg* or *Calsson*. It is therefore respectfully submitted that the present rejections as applied to Claims 1, 3-16, 18-22, 32-38, 40, 41, 44 and 45 are incorrect and should be overturned.

Date: 10-20-08

Respectfully submitted,



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